

NEW DISCOVERIES ALL OVER THE EARTH

BATHTUBS a MENACE to HEALTH and CLEANLINESS

THE bathtub habit, for so long upheld as a virtue, is now being attacked by medical authorities as little short of a vice. These strictures do not apply to the individual bathtub, which still holds estimable rank with the individual toothbrush, soap and towel. But bathtubs that are strictly individual are so few that they really do not enter into the current controversy.

In the majority of homes where bathtubs exist at all they are used indiscriminately by all members of the family, and by the occasional guest. It is true that most hotels have rooms with "private bath." But as the great multitude of hotel guests are transient, each of those private baths accommodates a steady succession of bathers, who know nothing about each other, and each of whom may have left behind him infectious microbes as souvenirs to be unconsciously appropriated by the next comer.

Thus practically all bathtubs are condemned as unsanitary, and under reasonable suspicion of harboring disease germs.

For a long time many medical men have entertained

Most Tubs Are So Shockingly UNSANITARY That Science Recommends SHOWERS as the ONLY SAFE WAY to TO BATHE

this opinion and have warned their patients against using a bathtub until it has been thoroughly cleansed with soap and hot water. Finally this warning has received the force and general publicity of an official action. On representations made by Dr. Henry Allers, Vice-President of the Board of Health of Harrison, N. J., that body recently voted in favor of abolishing bathtubs, and of urging the installation of shower baths in their place.

Here are the principal points of Dr. Allers's statement, upon which the Harrison Board of Health based its action:

"In making my professional rounds," said Dr. Allers, "I have on numerous occasions seen bathtubs which had not been cleaned since they were installed. Take the average user of the bathtub, especially in the larger tenements, and what do we find? Invariably a person gets into the bath and after a thorough scrubbing remains in the tub for some time. The water used in the scrubbing is not let out and the sediment floats on the water, with the result that it again gets into the open pores and there is as much, if not more, dirt on the body than there was before the immersion.

"For a practical illustration, just fill a glass with water and sprinkle some powder on top. Run a lead pencil to the bottom of the glass, take it out again and note what you find. The powder will adhere to the pencil, and the same thing applies to the person using the bath under the conditions I have described.

"The bathtub is unsanitary and a menace to the public health because a person with a skin disease can infect others through the use of the same tub. This fact cannot be denied.

"I think that you will agree with me that every person practically washes himself in his own dirt when using the tub. If the water was as dirty before entering the tub as it is when leaving it, I doubt if anybody



"Fill a glass with water and sprinkle some powder on top. Run a lead pencil to the bottom of the glass. When you take it out you will find some of the powder adhering to the pencil just as the sediment clings to your body when you emerge from the average tub."

would ever take a bath—at least in that way.

"I certainly prefer the shower to the tub bath. The shower accomplishes more than the tub, in that you know and feel that you are clean. Its installation is much cheaper, the shower requiring less floor space, less time for preparing, and may be regulated and enjoyed at any temperature.

YOUR BODY Full of METALS Rarely Found Elsewhere

THE human body appears more complex the more closely we examine it; and the presence within it of the secretions known as enzymes or ferments, hormones or bodies whose only function is apparently to excite other secretions, and antitoxins or substances which act as antidotes to poisons, would have been thought incredible by our forefathers. Yet that they really form part of the living body can no more be doubted than that they play a prominent and a beneficial part in our daily life. They are, however, all organic compounds with a very complicated molecule, and so far as we know, can only be manufactured by the subtle chemistry of the body itself.

Lately it has come to our knowledge that the body contains certain inorganic substances, metals, and elements of comparatively rare occurrence in nature, the immediate source of which, like their function, is in great measure unknown.

Of the presence in the body of some of these we have, of course, been aware for some time. Even when the human body was supposed to consist of so many pounds of carbon diffused through so many puffs of water, it was noticed that, when burned to ashes, sulphur and phosphorus were found in the residue. So, too, in the investigations which followed, a few years ago, the deaths from arsenical poisoning of several people who had imbibed beer from a common source, it was proved in evidence that the thyroid gland itself secreted arsenic in perceptible quantities.

Lately, however, we have seen reason to extend the list considerably. Manganese, a metal which imparts excessive hardness to different alloys, is much used in the manufacture of oxygen, and forms the active principle in a well-known disinfectant. It is found to be present in the bodies of human beings as in those of the birds, reptiles, and fishes. Boron, again, a light metal belonging to the same family as aluminum, which forms the base of the familiar borax, is also found in the bodies of man and nearly all other animals—those of the trout and the leech, for instance, containing something like one per cent of boron.

But the most unexpected of these strange constituents is fluorine, which is one of the chemical group of which the other members are chlorine, bromine, and iodine, and which, when isolated, is so powerful in its reactions that its

principal acid, which is used for etching on glass, can only be preserved in leaden bottles. In inanimate nature it chiefly occurs in fluor-spar.

Professor Armand Gautier, of the French Academy of Sciences, has now discovered that fluorine is not only present in almost every part of the human organism, but probably discharges there a sufficiently useful function. In the enamel of the teeth he finds as much as 180 milligrammes of fluorine in 100 grammes of enamel; less than a third of that amount is present in the bones, a still smaller quantity in the skin, and so on until we reach the striped muscular tissue, which holds an amount so tiny as to be almost negligible. Professor Gautier's researches have shown that it is present in greater quantity in the embryo than in the adult—that there is more fluorine in the egg, for instance, than in the chicken—and that it appears to be excreted in what may be called the outworn parts of the body, such as the skin, the hair, and the nails.

The amount of it present at any time seems to be always proportional to the phosphorus in the organism, which is itself an important constituent of the bones; and on the whole it is probable that its chief function is to build up the more solid and resistant parts of the body, such as the bony skeleton, and, as has been said, the enamel of the teeth. It might be compared to the iron girders used in modern build-

ing to reinforce the concrete of which the rest of the house is made; but as it is present in no small quantity in the brain and nervous tissues, it may have other offices at present unknown to us.

Even if this be the case, however, its purpose is hardly as extraordinary as the mystery of its origin. It is present, as we have seen, in relatively large quantities in the egg, and it is therefore probable that it is abstracted, so to speak, by the adult living body either from its diet or the surrounding atmosphere. Yet the amount of fluorine found in the egg of the domestic fowl negatives the idea that the whole of it can be present in the germ from which the egg develops by segmentation. The inference is therefore unavoidable that the fluorine—and possibly the other inorganic constituents of the body—are wholly or in part manufactured within the egg in the course of incubation.

But fluorine, like boron, manganese, phosphorus, and arsenic, are what chemistry calls elements or substances, which it is powerless to analyze further or to transform one into the other. How comes it, then, that the bodies of men and the lower animals are able to effect transmutation, the method of which cannot be even indicated in the laboratory? This is a question which science hopes some student of the relation between biological and general chemistry may soon be able to answer.

Cigarettes Least Harmful to Eyes

A SERIOUS affection of the optic nerves, called amblyopia, is the latest disease for which smoking and chewing are responsible. Oddly enough, the disease is more frequent among pipe and cigar smokers and chewers than among cigarette smokers. The latter escape more easily because the paper wrapping prevents poisons being absorbed through the mucous membrane of the lips, and also because in a cigarette the tobacco's combustion is rapid and almost complete.

The disease is rarely found in men under thirty-five years of age. As it is most prevalent among men of small incomes, it is suspected that the cheaper grades of tobacco are more liable to cause the disease.

The first symptoms are often irritability, insomnia, general weakness and indigestion. Then comes impairment of vision; the patient seems to be looking through a fog and can see relatively better in a subdued light and when the pupils are dilated. There is also color blindness for red and green, but unless the sufferer's occupation is such as demands careful differentiation of colors, this is usually revealed only by an oculist's examination.

The chances of curing tobacco amblyopia are excellent, even in cases of long standing. A relapse is almost unknown, even when the patient returns to the use of tobacco in large quantities. Styrachine, taken under competent medical advice, is the best remedy to combat the trouble.

Why Many Mothers Use Great CARE IN NAMING BABIES

BE careful what you name your baby, for by whatever letter occurs most often in his name he will be governed. That is the theory of a club of men and women who profess to have found by studying several hundred persons of the same name the same sort of characters.

Suppose, for instance, they say, that you want to name your girl baby "Ada." A pretty name some think it, and a pretty song or two have been addressed to owners of it. But in Ada there is a majority of the letter "A." To what does that preponderance of "A" lead? Students of influence of letters upon names and names upon characters have discovered about women named Ada, that they are ambitious and fond of art and literature. They are fond, too, of music. They are authoritative, active, accomplish much, but are of very quiet manner. They are leaders of men and are successful in any post of authority.

Or suppose that the baby is a boy and you wish to name him "Abraham." "Abraham," according to these students of the influence of letters in a name will be quick and active in brain, if not body. He will be fond of

mysterious things and inclined to be visionary. He will be diplomatic, but not always truthful. He will be successful as a writer or speaker.

The theory is that the influence of the letter "A" is to give activity of brain and clearness of mind. No one with several "A's" in his name will suffer from mental fog.

"B" in the name indicates a very spiritual vision and extremely delicate tastes. Persons with several "B's" in the name, as Clarence, are vital and long lived people. "D" people these students have found to be gifted with that too uncommon trait, "common sense." "E" folk are versatile. The men named Ebenezer, for instance, are the kind who are "handy about the house," and women named "Emeline" can earn a good living at half a dozen trades.

"F" folk grow rich. They have the accumulative gift. A woman named "Follet" for instance, will never enter the alms house. Another of her characteristics is that she has a quiet bearing and agreeable manner. Those you know whose name is George are persons of reserve and of unusual strength of character. "H" stands for effort. Try to recall a "Hannah" who was not of necessity a hard worker.

Don't weigh your baby down with the name Millicent or William. It is said that persons with names in which there is more than one "I" are over sensitive, and will never be happy wives or husbands because they are hypersensitive and incline toward quarrelsomeness. "J" is a good initial. The Johns and Julias are good leaders, but addicted to being "bossy." "K" is a strong force. Katherine and Karl have a strong personality. "L" men and women are distinguished for their sweetness of manner. Summon memories of the Lillas and Llonels you have known. Normans and Nathans and Nannies and Annas are nervous persons. Those whose names begin with or contain several "O's" have not the fine sense of where firmness of character ends and obstinacy begins. "P" seems to assure powerful personality. Neither

Pauls nor Paulines are apt to be namby, pamby folk. Roberts and Rachels are sure to be active humans and Sidneys and Sarahs to be "keen" or acute of mind. "T" stands for unusual brain power. You have never, according to the club whose object is name study, known a stupid Theodore. "U" implies a colorless negative quality of character. Names starting with it are negative forces. So do not name your baby Uriah, nor Ulysses, nor Ursula. "V" is quite the opposite, standing for positive traits. "W" is not the best name letter. The Walters and Williams miss much of happiness and something of success through being too reserved and over sensitive. The same is true of persons whose names begin with X Y or Z. Fortunately for Euphony there are few such names.

How SOAP, GLUE, TIN and Other Things Are SOLD FOR SILK

DURING the past five or six years increasingly large quantities of adulterated silks, artificial silks and various other inferior substitutes have been palmed off on the public as the genuine, simon pure article. This is a comparatively new form of fraud and those who practice it are so ingenious that in most instances it is said the retail dealer is as ignorant as his customer that he is being grossly cheated.

Glue is not a thing we ordinarily associate with silk, but a chemical analysis will reveal a liberal percentage of it in much of the silk on the market. The glue is added when the silk is reeled to increase the fabric's weight and give it consequently a higher value.

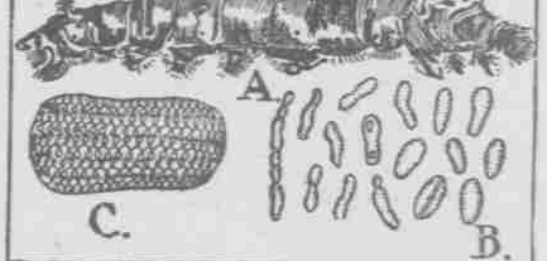
Other substitutes used by dishonest manufacturers for the same purpose are various soaps, oils, gums and chemicals.

Some manufacturers believe the deception is harder to detect when the extra weight is added while the silk is being dyed. When this is done salts of tin, iron and lead are commonly used.

Weighted silks look rich and feel heavy, but the process of giving them a false value has weakened the walls of their fibres so that they easily break down.

Fraying splits will often begin to appear before the material has been subjected to any strain—while it is being made into a gown, is lying on the shelves of a store or hanging in a closet. On the other hand, pure silk of good quality will give more than fifty years of service with almost no deterioration.

One of the favorite substitutes for pure silk is the use of the spun instead of the reeled fibre. Others



A—The full size silkworm. B—Eggs, of which the female lays several hundred within three days. C—Diagram of a silk cocoon, showing the method of spinning.

a sort of compromise is effected by hanging a shower apparatus above the bathtub. But instead of this being generally used for rinsing after the bath, it is seldom in order—and has a bad reputation with the women of the family for splashing the bathroom floor. Its obvious improvement over the bathtub in all ways passes unnoticed. If either is banished, it is never the bathtub that goes.

Within the last few years travellers in this country have observed that more and more of the new hotels are being fitted with showers. The "private baths" remain as a necessity, because the majority of guests object to having their habits peremptorily changed by hotel proprietors or anybody else; but on certain floors, for the use of enlightened men patrons, showers are conveniently placed and available without extra charge to patrons who thereby are able, and glad, to save a dollar a day by taking rooms without "private bath."

Owing to the much shorter time required in preparing and taking the shower bath, one small room thus equipped serves the needs of at least twice as many persons as does the ordinary bathroom.

As the water from the shower runs off the soaped body of the bather, it does not accumulate, as in a tub, but is immediately drained away into a waste-pipe over a slightly sloping floor. Excepting the soles of the feet, the bather's body comes into contact with nothing in the room—the towels he uses being, of course, safe from rehandling by subsequent bathers.

As Dr. Allers pointed out to the Harrison Board of Health, the expense of installing a shower with hot and cold water graduated by the bather according to his preference, is less than in the case of the unsanitary bathtub—which also takes up more room. For hygienic reasons the shower is immensely superior, as its temperature can be instantly and repeatedly changed at the bather's wish, and it can be applied to any or all parts of the body, as desired.

If you are planning a new home or remodeling the old one, it might be a good idea to give careful consideration to the question, out-of-date, unsanitary bathtub, vs. the cleanly, hygienic shower.

Light, Heat and Power from the TANGO?

IN these days of the dancing furore, when every third person, whether seven years old or seventy-seven, is tangoing and dipping—when many doctors advise dancing to tone up the health, prevent laziness and indigestion, and at the same time reduce obesity—it is not at all surprising that an engineer should suggest a plan for turning part of the tremendous amount of energy that is released in every ball-room into the generation of light, heat and power.

Jerome Meyers, a Baltimore electrical engineer, says it is perfectly feasible to combine the pleasure and physiological benefits of dancing with the storage of the energy spent by the dancers for future use. A little dynamo with a storage battery could be devised, he thinks, and the muscular activity so gracefully, yet vigorously expended, could be saved up in the accumulator.

The vibration of the floor as well as the muscles can thus be conserved

and a small circuit of electric lamps can be run. From twenty-five to fifty volts can be generated, just as riding a bicycle or pulling exercise machines in your bath room in the morning will conserve ten or fifteen volts in your accumulator to run several electric lights at night.

One hour on a bicycle will store up power enough to keep several incandescent lamps lighted up. Mr. Meyers believes enough can be stored up from several couples dancing during an evening to light electric lamps, heat a room, and run a number of sewing machines besides.

Build Houses of Porcelain

A HOME of porcelain, that can be erected with a screwdriver and wrench in a few hours, is the plan of W. Hales Turner, who calls himself "the pioneer of porcelain."

"In the construction of the porcelain house," says Mr. Turner, "there is a complete absence of all absorbent materials, such as bricks and mortar, plaster, whitewash, concrete, woodwork and paper."

"The complete porcelain house is constructed as follows: Framework, preferably of light, rustproof metal. Into this framework are fitted the huge porcelain panels, half an inch thick, six feet long and

three feet wide, weighing five pounds to the superficial foot. These panels are decorated and glazed on both sides to resist wind, storm and weather. They are fitted with steam tight joints, made of copper coated asbestos tape.

"Porcelain is non-absorbent, insect and germ proof, fireproof and washable, and it makes possible for all a perfectly hygienic home. As for warmth, an inch thick wall of pure porcelain glazed both sides is better able to keep out cold than an eighteen-inch brick wall. With bricks and mortar it takes months to erect a house, of say, five rooms; a porcelain house of the same size can be put up in a few hours."

Why the SUN Is the COLDEST of STARS

PROFESSOR ROSENBERG, an ingenious German astronomer, has a new method of photography that imprarts the negative ac-

cording to the heat or coldness of a star.

When the temperature of an incandescent body is raised, that is when a piece of metal is slowly and gradually heated, or when a current which becomes continuously more and more intense, is passed into a metallic filament, not only is the amount of light emitted by the body greatly increased, but the composition of that light varies. Indeed, it becomes richer and richer in blue rays and poorer and poorer in red rays.

This is the reason a piece of iron heated progressively becomes first dark red and then cherry red, then in turn orange, and finally a dazzling white. The proportion of red rays to the blue ones, or that of any one color to another is associated with the temperature of the incandescent object by a definite rule.

Dr. Rosenberg by his photographs determined these relative intensities of the rays of different colors in the spectrum of sixty stars including the sun. Thus he discovered that the sun has a temperature of 4,550 degrees; Aldebaran, that beautiful star in Taurus, 5,150 degrees; the Polar Star, 5,200 degrees, and the Dog Star Sirius, 7,500 degrees. Ten stars of the sixty have the enormous heat of over 40,000 degrees.

All of this goes to show that the sun is undoubtedly one of the coldest of the stars. It also is evidence that the absurdly low temperatures of the earth which living things here consider hot, are as compared with the heavenly bodies, regions of frigidity. Even the electric furnaces with its 2,500 degrees of heat is as ice compared with temperatures in the Dog Star and the others.

GRAPE LEAVES for HOT HEADS

DURING the hot days of Summer thousands of men who are compelled to be out in hot sun are in need of something to help keep the head cool. All kinds of ways are being suggested, such as ventilated hats and hats with an inner band to permit the air to circulate between the hat and the head, and the advice of some to wet the head frequently are being tried, but none are giving as much real satisfaction as is desired.

One of the best remedies for heat on a Summer day is placing of grape leaves in the crown of the hat. The leaves will

prevent sunstroke or heat prostration, and they make the wearer feel much more comfortable than any of the many different suggestions in headgear or physicians' advice.

Six or eight leaves from the grapevine will last several hours. They are not difficult for many to obtain, as many grapevines are grown all over most large cities.

In all small towns and in the rural sections the leaves are easily obtained.

In some of the city markets on very hot days grape leaves may be purchased in sufficient quantity to place in the hat, and they find a ready sale. Many persons see them, but do not know their true value in preventing hundreds of cases of heat prostration.